

TRANSLATION

(19) REPUBLIC OF FRANCE
(11) Publication No.: FR 2 576 506 - A1
(21) National registration No.: 86 00492
(51) Int. Cl.⁴: A 47 G 27/04.

(12) APPLICATION FOR PATENT OF INVENTION

A1

(22) Date filed; January 15, 1986
(30) Priority: CH, January 29, 1986, No. 00 374/85-4
(43) Date application made public: BOPI "Brevets" No. 31 of August 1, 1986

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(54) Title:
**Intermediate Covering and Method for Laying Floor Covering
According to the Installation and Removal method**

(57) Abstract

a. Intermediate covering and method for laying floor coverings according to the installation and removal method.

b. Covering characterized by the fact that it has a nonwoven or a nondeformable fabric which has a layer of synthetic resin on each side, at least one of which is compatible with the adhesive, as support material.

c. The invention concerns an intermediate covering and method for laying floor coverings according to the installation and removal method.

INTERMEDIATE COVERING AND METHOD FOR LAYING FLOOR COVERINGS ACCORDING TO THE INSTALLATION AND REMOVAL METHOD

The invention concerns an intermediate covering for laying a floor covering on a floor according to the installation and removal method and a method for laying a floor covering using such an intermediate covering.

In laying floor coverings, carpets, and others modern covering materials, for example according to the installation and removal method, an attempt is made to make it possible for the covering to be removed from the floor again (installed and removed) integrally and without deterioration of the floor. Despite this, the laid floor covering must practically meet all of the required conditions, allowing passage of wheel chairs, for example. It is also desirable for the recovered floor covering be usable again.

Numerous systems have already been proposed for the installation and removal method, and two, also encountered in practice, merit mention: according to one of these systems, it is attempted to reduce the adhesion between adhesive and floor, for example, by means of preliminary covering of the floor with a washable material. In the other system, an intermediate layer with adhesive on both sides, a nonwoven, for example, which is removed at the same time the floor covering is removed, is used. In the existing systems, residues frequently remain on the floor which can only be removed at great expense. The floor can also be deteriorated by the removed parts. In addition, the recovered floor coverings can hardly be used.

The goal of the invention is to be able to lay durable, undeformable floor coverings advantageously from the economic point of view which nevertheless permit removing them without leaving residues, and where the recovered floor covering can be reused.

To attain this goal, the invention proposes an intermediate covering characterized by the fact that it has a nonwoven or undeformable fabric with a layer of synthetic resin on each side, at least one of which is compatible with the glue, as support material, and a method of installation which consists of covering the floor with the above-mentioned intermediate covering, applying an adhesive to the upper face of this intermediate covering, and gluing the floor covering to the intermediate covering.

To compensate for rough places in the floor, felt-cardboard under linoleum and sometimes glued to it has been used. Felt-cardboard is not very strong, absorbs moisture from buildings, is not undeformable, and leads to the formation of undulations in the floor covering. If it is glued to linoleum, it also absorbs a large amount of adhesive.

The intermediate covering in the invention forms an undeformable underlayer compatible with the adhesive, which can also be installed on a permanent finished covering such as parquet, carpeting, etc. The adhesive can then be applied with no problem on the intermediate covering, the as the plastic layer of the latter, compatible with the adhesive, allows economical application of the latter. Almost all types of floor covering can be glued to this support with no problem. The bond is so stable that the laid floor covering immediately passes the wheelchair test according to the standard DIN 68131. Despite this, the composite element constituting the intermediate covering and floor covering can be

removed again each time without leaving residues and without deterioration of the floor. The recovered floor covering can also be used again with the intermediate covering adhering to it.

The support material can be a nonwoven or a fabric with fibers or thread made of glass, polyester, polypropylene, polyamide, artificial wool, or blended fibers.

The synthetic resin layers can be made in the form of coatings. The plastics can be styrene—butadiene, styrene—acrylate polymers, as well as polychloroprenes, copolymers of ethylene and vinyl acetate, polyacrylates, copolymers of vinyl acetate or natural rubber.

The intermediate covering according to the invention can be fabricated by applying the plastic or plastics on the support material in the form of dispersion, solution, or molten mass. Supplementary cross-linking of the plastics can also be conducted. The synthetic resin layer can be composed of a pure synthetic resin or pure synthetic resins, or can be modified. For example, other resins (such as an ester gum) or plasticizers (such as dioctyl phthalate) and/or fillers (such as chalk, talc, tiff, and quartz) can be used as modifying agents.

The intermediate covering can if necessary also be made flame retardant, for example, with antimony compounds, organic chlorinated and brominated compounds, and/or aluminum hydrate, alone or in appropriate combination with each other or with other products.

The intermediate covering according to the invention can be made conducting, for example, by incorporation of conducting fillers (such as carbon black or graphite) or by simultaneous use of metal fibers (such as copper, silver, or aluminum fibers).

According to the method in the invention, the floor (a utilization floor of the type cited, for example) is covered with the intermediate covering according to the invention. This

can be done by simply unrolling the intermediate covering without any attachment to the floor.

If several strips of intermediate covering are necessary due to the large area of the floor, the seams between strips of intermediate covering are advantageously doubled with a protective layer (paper, for example). Even if a little adhesive flows through the seams during application of adhesive on the intermediate covering, this protective layer could prevent it from reaching the underlying floor.

If several strips of floor covering are laid side by side, it is advantageous to lay them transversely with respect to the direction of the strips of intermediate covering, because the seams between the covering strips can then be kept close together without requiring other auxiliary means (such as connecting bands).

For application of adhesive to the intermediate covering, any appropriate adhesive can be applied by any existing method. Gluing with the floor covering can then be conducted in the usual manner.

The composite element formed of the intermediate covering and the floor covering is very stable and relatively rigid.

A floor covering laid by the method in the invention satisfies the conditions required for adequate installation.

The composite element constituting the intermediate covering and the floor covering can be removed whole, without difficulty, from the floor (to which it is not glued) without any deterioration of floor or covering; the removed covering can be relaid if desired.

EXAMPLE

A coating slip having a 60-80 wt. % concentration of solids containing a carboxylated styrene—butadiene latex, a flame retardant agent, an antiaging agent, and fillers such as chalk and aluminum hydroxide is prepared.

Using a scraper, 500-600 g/m² of this slip is applied first on one side of a 160 g/m² nonwoven polyester covering.

Intermediate drying is conducted, after which 500-600 g/m² is also applied with the spreader on the other side of the nonwoven polyester covering.

It is then dried with hot air at a temperature of 150-170°C, then rolled up.

An intermediate covering is obtained according to the invention which has a rigidity similar to the rigidity of cardboard and which is undeformable and water-resistant.

The intermediate covering according to the invention prepared in this way can be used in implementation of the methods according to the invention.

The intermediate covering according to the invention is freely laid on any floor.

As the floor is thus protected without means of attachment, the fact that it involves a still raw floor or a floor which already has a covering such as carpeting, parquet, etc., that is, that a finished floor is already involved, is not important. If several strips of intermediate covering must be laid, an appropriate economical material, paper, for example, is placed under the end seams between the strips of intermediate covering positioned next to each other so that the adhesive cannot reach the floor through these seams. An ordinary adhesive for floor coverings is applied in the known manner on the installed intermediate covering and can be

left to dry in between if necessary. The floor covering is then glued to the intermediate covering, an operation for which the usual techniques can also be used.

In particular, if several strips of floor covering must be laid in one layer on several strips of intermediate covering arranged side by side, the strips of floor covering are laid so that their direction is transverse to the direction of the strips of intermediate covering.

CLAIMS

1. Intermediate covering for installing a floor covering on a floor according to the installation and removal method, characterized by the fact that it has a nonwoven or undeformable fabric as support material with a layer of synthetic resin on each side, at least one of which is compatible with the adhesive.

2. Intermediate covering according to claim 1, characterized by the fact that the support material is a nonwoven or fabric containing fibers or threads of at least one of the following materials: polyester, polypropylene, glass, polyamide, artificial wool, and blended fibers.

3. Intermediate covering according to claim 2, characterized by the fact that the support material is a nonwoven covering made of polyester fibers.

4. Intermediate covering according to any one of claims 1-3, characterized by the fact that at least one layer of synthetic resin is totally or partially comprised of at least one of the following polymers: polystyrene—butadiene, polychloroprene, polystyrene—acrylate, acrylate copolymer, copolymer of vinyl acetate and ethylene, copolymer of vinyl acetate and natural rubber, and can contain plasticizers and/or fillers.

5. Intermediate covering according to any one of claims 1-4, characterized by the fact that the synthetic resin layer is flame retardant.

6. Intermediate covering according to any one of claims 1-4, characterized by the fact that the layer of synthetic resin is flame retardant.

7. Intermediate covering according to any one of claims 1-6, characterized by the fact that it is impermeable to the adhesive.

8. Method for laying a floor covering on a floor, characterized by the fact that the floor is covered with an intermediate covering according to any one of claims 1-7, an adhesive is applied to the upper face of this intermediate covering, and the floor covering is glued to the intermediate covering.

9. Method according to claim 8, characterized by the fact that the floor is covered with several strips of intermediate covering positioned side by side, and a protective layer is placed under the "seams" between the strips.

10. Method according to claim 8 or 9, characterized by the fact that the floor is covered with several strips of intermediate covering positioned side by side and several strips of floor covering are laid side by side and glued to the intermediate covering transversely with respect to the direction of the strips of intermediate covering.

Translation:
Language Services Unit
Cytech Languages, Inc.
September 28, 1998